

### **REMARKS**

The issues outstanding in the office action mailed February 9, 2009, are solely the rejections under 35 U.S.C. 103. Reconsideration of these issues, in view of the following discussion, is respectfully requested.

Claims 1-19 and 21 have been again rejected under 35 U.S.C. 103 over Stern '946 taken with Khare '091, Andersen '305 and Walker '310. Reconsideration of this rejection is again respectfully requested.

As will be recalled, Stern discloses the production of a catalyst obtained by impregnation, mixing or co-precipitation. Patentees disclose a process comprising "mixing of at least one zinc compound and hydrated alumina in the presence of a peptizing agent (nitric acid, acetic acid). The zinc compounds are then selected from the group that is formed by zinc oxide, zinc hydroxide, zinc carbonate and zinc hydroxy carbonate. The mixed product is then shaped by extrusion, and then dried and calcined." Claim 21 in the present application recites a process for the preparation of a catalyst in which an alumino gel is mixed with a mixture of zinc oxide, water and nitric acid, and zinc nitrate. Although claim 21 has not been discussed separately in the previous office action, it is submitted that this claim, which recites the use of zinc nitrate (not disclosed in Stern) is not suggested by this combination of references, for the reasons discussed below. In order to streamline prosecution, it is noted that claim 1 has now been amended to also recite, rather than zinc carbonate, solely zinc nitrate. To the extent that the office action addresses the deficiency of Stern to disclose zinc nitrate, it appears to be the passage at page 7, where it is argued that Khare teaches a method of making zinc aluminate wherein a mixture of "zinc oxide and zinc nitrate or zinc carbonate" is contacted with nitric acid, or combined with alumina peptized with nitric acid to form a paste. However, while Stern is directed to the production of a catalyst which is employed in the production of monocarboxylic acid esters, Khare is directed to an entirely different material, the production of a sorbent composition. See, for example, column 1, the bold heading and the first sentence under "background." Patentees teach that their sorbent is used for the removal of sulfur from fluid streams. See the background

section of the patent. Sorbents are highly different from catalysts, and it is respectfully submitted that one of ordinary skill in the art, regardless of the compositional similarities, if any, between the materials of Khare and Stern, would not look to sorbent compositions for teachings relevant to the production of catalysts. It is well known that catalysts are an unpredictable art, and that small changes therein can result in increased activity or loss of activity. Substitution of a material in a catalyst, based on the disclosure of such substitution being acceptable in the sorbent art, would in no way be accepted by one of ordinary skill on the catalyst art as being a relevant teaching. Thus, it would not even be obvious to try the use of zinc nitrate, disclosed in the sorbent art, in the production of the catalyst. Accordingly, “cost optimization” noted at page 7 of the office action is irrelevant. One of ordinary skill in the art simply lacks any reasonable expectation of success, nor any ability to determine whether the resultant material would even be functional in the process of the primary reference. Clearly, motivation is lacking for such a modification, such a modification defies “common sense” and is not obvious under any standard promulgated by the courts. The fact that both references may be directed to the production of “zinc aluminate” per se simply does not matter when the references are directed to such diverse fields, and where one of ordinary skill in the art does not know if a modified product would be suitable in the utility in which it would be put. Accordingly, since none of the other references cited address the use of zinc nitrate, it is submitted that, on this basis alone, the rejection should be withdrawn.

Moreover, Applicants disagree with the argument at page 6 of the office action that, with respect to the present recitation that the alumina is peptized before mixing with the mixture of zinc nitrate, etc., it would be “obvious to one of ordinary skill in the art to make changes in the sequence of adding ingredients.” Such a change in the production process is far more than reversing the order of ingredients as they are dumped into a pot. Instead, by reversing the order of combination disclosed, for example, in the Stern reference, the chemical reactions which occur upon first combination of ingredients are different. For example, it is evident from example 4 in the specification that the order of introduction of the various components results in different properties of the resultant material, and moreover, that the claimed order of introduction

produces an advantageously improved crush strength. In example 4, example 2 in accordance with the invention is repeated, but the alumina gel is first mixed with a nitric acid peptization solution, and subsequently an aqueous mixture of zinc nitrate and zinc oxide are introduced. By contrast, in example 2, zinc nitrate is mixed with zinc oxide, *before* introduction of the alumina gel. In table 1 at page 10 of the specification, the example 2 possesses nearly *double* the resistance to crushing than example 4. It is acknowledged that the office action argues, at page 3, that the prior art (which teaches a mixture of zinc oxide and zinc carbonate) is not equivalent to the comparison in the specification. This has been attended to, by reciting zinc nitrate in the claims. Thus, contrary to the indication at page 3 of the office action, the prior art does not teach a substantially similar process. Moreover, if it would be obvious to alter the order of introduction in the materials, then one of ordinary skill in the art would have the expectation that such modification of the order would have little or no effect on the properties of the resultant material. However, the specification shows that the order of the materials can result in an unexpected and advantageous near doubling of crush strength. Thus, this provides strong evidence that the modification to order of introduction of the components is not taught or suggested by the prior art.

Andersen and Walker are cited for an alleged teaching of various features of various dependent claims. However, neither of these references remedy the deficiencies of at least Stern and Khare, as discussed above. Accordingly, it is submitted that this rejection, in its entirety, should be withdrawn.

Claims 1-19 and 21 have also been rejected under 35 U.S.C. 103 over Khare taken with Walker and Anderson. As noted above, Khare does not suggest mixing of zinc oxide and zinc nitrate, along with water and nitric acid, prior to adding peptized alumina gel. As noted above, the unexpected and advantageous improvement in crushing strength is therefore not taught by this reference. Walker and Anderson do nothing to remedy this deficiency. Accordingly, it is submitted that this rejection should also be withdrawn.

In conclusion, it is submitted that all rejections of record should be withdrawn, and the claims passed to issue. Should the Examiner have any questions or comments, he is cordially

invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

/Harry B. Shubin/

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Harry B. Shubin, Reg. No. 32,004  
Attorney/Agent for Applicant(s)

MILLEN, WHITE, ZELANO  
& BRANIGAN, P.C.  
Arlington Courthouse Plaza 1, Suite 1400  
2200 Clarendon Boulevard  
Arlington, Virginia 22201  
Telephone: (703) 243-6333  
Facsimile: (703) 243-6410

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